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CLAIMS

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[Claim(s)]

[Claim 1] It has the specimen supporter material which classifies the airtight interior of a room while supporting a specimen, when it consists of a sealed cabin which shuts up a part of specimen, and tubed flexible thin meat material, the wall of a sealed cabin is equipped and the inside carries out a pressure welding to a specimen peripheral face. While measuring the ventilation resistance and the airstream close rate of a specimen by attracting airtight indoor air in the ventilation measuring instrument which attracts specimen supporter material from [ the ] a periphery, is made to extend the bore of specimen supporter material, and was made to perform attach/detach of the specimen to a sealed cabin. While constituting said tubed specimen supporter material from the tubed periphery section, a septum of the thin meat which projects in a central circles wall, and a specimen support hole prepared in the core of this septum and supporting a specimen by the light-gage edge of a specimen support hole. Specimen means for supporting which are made to extend the path of a specimen support hole by attracting the periphery section corresponding to a septum, and were made to perform attach/detach of the specimen to a sealed cabin.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[Industrial Application]

This invention relates to the specimen means for supporting suitable for the equipment which is applied to the specimen means for supporting in a ventilation measuring instrument, especially measures the ventilation resistance of a paper volume cigarette etc.

[Description of the Prior Art]

In case this kind of ventilation measuring instrument holds a specimen to the airtight interior of a room and attracts predetermined for the airtight interior of a room by the flow rate, it measures the flow rate of the air attracted in a specimen from the exterior, and the ventilation resistance of a specimen.

In such equipment, in order to support the lightweight and flexible specimen like a cigarette, a flexible member is used with the thin meat like a latex tube. And if this specimen supporter material is in the automatical measurement machine which measures a specimen continuously, since a role of support of a specimen, release, and the partition (bay which maintains confidentiality) of a sealed cabin is played, generally discharge actuation of specimen support is already performed by beam negative pressure suction.

Fig. 8 shows the specimen means for supporting in the ventilation measuring instrument like the above, the sealed cabin 1 is classified into the 1st, 2nd, and 3rd secret room 1a, 1b, and 1c from the upper part by flanges 2, 3, and 4, and the movable specimen stopper 5 is formed in the direction of an arrow head at the lower part of 3rd sealed-cabin 1c. In each flanges 2 and 3 and 4, the suction ways 2a, 3a, and 4a are formed, the retaining ring 7 for equipping with the specimen supporter material 6 mentioned later inside these flanges 2, 3, and 4 is fixed, and said suction ways 2, 3, and 4 and suction hole 7a open for free passage are formed in the retaining ring 7. the relation between the flange of each above and a retaining ring 7, and the specimen supporter material 6 is completely the same, and Fig. 9 expanded and showed this one.

Fig. 10 is a sectional view showing the configuration at the time before wearing of specimen supporter material of wearing, and it is formed in one from the synthetic-resin material of flexible and thin meat, and it serves as cylindrical and the configuration in which the both ends were turned up by the U shape after wearing like a latex tube before wearing (a Fig.).

As shown in Fig. 9, into specimen support hole 7b of the center of a retaining ring 7, this specimen supporter material 6 is inserted so that abbreviation adhesion may be carried out, the both ends of the turned-up specimen supporter material 6 are extended, and are stuck to the periphery section of a retaining ring 7, and, thereby, a retaining ring 7 is equipped with them.

Furthermore, slot 7c is formed in the periphery of a retaining ring, and when the omicron ring 8 fits in in this slot 7c, omission from the retaining ring 7 of the specimen supporter material 6 are prevented.

A specimen 9 is inserted into specimen support hole 7b at the time of measurement, and the location of the longitudinal direction is defined by the specimen stopper 5. In the case of insertion, negative pressure is applied from the exterior through the suction ways 2, 3, and 4 and suction hole 7a. Since the specimen supporter material 6 will be in an adhesion condition to the wall of a retaining ring 7 with negative pressure, a specimen 9 is easily \*\*\*\*(ed) in specimen support hole 7b formed in diameter expansion from the outer diameter of a specimen 9 for how many minutes. Subsequently,

since the wall of the specimen supporter material 6 bulges inside as shown in Fig. 9 if negative pressure is removed, it means that the path of specimen support hole 7b was reduced, and the lightweight specimen 9 to the elastic force of the specimen supporter material 6 is supported in a sealed cabin 1. Under the present circumstances, it means that the inside of a sealed cabin 1 had been classified into three sealed cabins 1a, 1b, and 1c by three specimen supporter material 6. If after measurement termination applies negative pressure to the periphery of the specimen supporter material 6 again, a specimen 9 will fall out of a sealed cabin 1.

By the way, in the above-mentioned specimen means for supporting, since support of the specimen by specimen supporter material is performed by the wall of the specimen supporter material which bulged in the shape of a curved surface, the contact turns into field contact. Since a field contact part will be blockaded when measuring the amount of airstream ON for every each part grade at two or more secret rooms about the result, for example, the specimen which had detailed permeability in the whole periphery section like a cigarette, there be a fault that measured value with a high precision could not be obtained.

This invention was made in view of the above-mentioned point, tends to hold a specimen by the fewest possible contact, and tends to offer the specimen means for supporting of the ventilation measuring instrument which enables high measurement of precision.

[The means and operation] for solving a trouble

This invention in order to attain the above-mentioned purpose tubed specimen supporter material While constituting from the tubed periphery section, a septum of the thin meat which projects in a central circles wall, and a specimen support hole prepared in the core of this septum and supporting a specimen by the light-gage edge of a specimen support hole It is characterized by the configuration which is made to extend the path of a specimen support hole and was made to perform attach/detach of the specimen to a sealed cabin by attracting the periphery section corresponding to a septum. the touch area of specimen supporter material [ as opposed to / since support of a specimen and the partition of a sealed cabin are performed with the pressure welding of the light-gage edge to a specimen by the above configuration / a specimen ] -- in the case -- \*\* -- it becomes small and high measurement of precision is attained.

[Example]

The example of this invention is explained based on Fig. 1-7.

Figs. 1 are [ the sectional view of specimen supporter material and Fig. 3 of the important section sectional view of an example and Fig. 2 ] sectional views of a retaining ring.

In drawing, the specimen supporter material 6 is a cylindrical member of the thin meat fabricated with flexible silicon, and has tubed periphery section 6a, septum 6b which projects inside in a central wall, and specimen support hole 6c of a septum core. The die length of periphery section 6a is the thickness and abbreviation identitas of a retaining ring 7 in 12mm, the thickness of septum 6b is a configuration which has a thin taper cross section thick at a periphery with 0.25mm in 1.5mm and the center section, and the path of specimen support hole 6c is set as 5mm smaller than the path of a specimen 9 for how many minutes.

In the periphery section, it has two circular-sulci 7c up and down, and when [ of adsorption room 7e and adsorption 7e ] 7d of screw sections screws on the wall of a sealed cabin 1, adsorption room 7e opens a retaining ring 7 for free passage outside through suction hole 7a and suction way 2a at 7d of screw sections, and the inner circumference section. And by fitting in the omicron ring 8 in said circular-sulcus 7c, adhesion maintenance of the specimen supporter material 6 is carried out at the wall of a retaining ring 7.

Fig. 4th [ the ], 5, and 6 shows actuation of the above-mentioned specimen means for supporting. In the above-mentioned specimen means for supporting, conventionally like equipment, if negative pressure suction of the periphery section 6a of the specimen supporter material 6 is carried out from adsorption room 7e, the center of periphery section 6a corresponding to septum 6b will be drawn in adsorption room 7e, and as shown in Fig. 4 , the path of specimen support hole 6c will be extended to about 12mm. At this time, a specimen 9 can be inserted from the upper part. As negative pressure suction is stopped and the inside of adsorption room 7e is shown in atmospheric pressure, then Fig. 5 , periphery section 6a of the specimen supporter material 6 returns, and the edge of septum 6b curves slightly and is stuck to the going-out side of a specimen 9 by pressure. Thereby, while a

specimen 9 is held, each sealed cabins 1a, 1b, and 1c are sealed. If measurement of a specimen 9 is completed, as negative pressure suction is carried out again and it is shown in Fig. 6, specimen support hole 6c will be opened. Thereby, a specimen 9 falls below and is led to degree process. Specimen support of this example is made in the septum 6b common-law marriage of thin meat. Therefore, the contact to a specimen 9 and the supporter material 6 is approximate line contact, or turns into field contact with a small area, and there are few rates which blockade the peripheral wall (it is the air hole of space if a specimen is a cigarette) of a specimen 9, and it is possible. [ of measurement of ventilation resistance with a high precision ] Moreover, the sealing nature by septum 6b in this case is good.

Next, actuation of the ventilation measuring device equipped with the above-mentioned specimen means for supporting is explained based on Fig. 7.

Before actual measurement, a criteria flow rate setup of 11 pumps for measurement is performed first.

First, it turns on a bulb 12 for measurement/adjustment change-over adjustment-side, POMBU 11 for measurement is operated, and air is inhaled from a test piece 13 side. Under the present circumstances, a setting index is operated for a rate controller 15 so that the indicated value of the ventilation resistance measuring instrument 14 may turn into a ventilation resistance value of a test piece 13. A bulb 12 is fixed to a measurement side after the actuation termination. A criteria flow rate setting activity is completed now.

Next, although the specimen 9 which ended last processes (for example, circumferential measurement of a cigarette etc.) is held in the level condition by the reversal holder 16, if there is no specimen 9 into the measurement container 17, CPU19 will issue the command by specimen carrying in being possible with the signal from the specimen detection sensor 18. While the rotary bulb 20 and the specimen stopper 5 will be in a closed state by this command, the bulbs 22 and 23 of 21 vacuum pumps for grip seals (specimen support) are opened, negative pressure suction of the periphery section of the specimen supporter material 6 is carried out, and specimen support hole 6c is that the diameter of it is expanded.

Here, fall carrying in is carried out by 90-degree reversal of the reversal holder 16 into the container 17 for measurement, and halt maintenance of the specimen 9 currently held in the level condition is carried out by the specimen stopper 5.

The specimen 9 held in the container 17 is detected by the specimen detection sensor 18, and a detecting signal is sent to CPU19. Based on this, the closed command of the bulb 23 for grip seals is issued, a bulb 23 is closed, the periphery section (adsorption interior of a room) serves as atmospheric pressure in the specimen supporter material 6, and CPU19 seals three sealed cabins 1a, 1b, and 1c in a container 17 while the path of specimen support hole 6c becomes small and holds a specimen 9. And the specimen stopper 5 is opened and measurement is started.

Measurement is made as follows. The flowmeter 24 which attached in opening of sealed-cabin 1a the air content which flows in sealed-cabin 1a, other flowmeters 25 with which the air content which flows in sealed-cabin 1b was prepared in opening of sealed-cabin 1a, and the ventilation resistance in sealed-cabin 1c are respectively measured with the ventilation resistance measuring instrument 14. By inputting these values to CPU19, the airstream close rate for the ventilation resistance of the specimen 9 whole and every each part grade of a specimen 9 is calculated.

By the command of CPU19, the rotary bulb 20 opens, the bulb 23 for grip seals serves as open again, the specimen supporter material 6 is attracted, the path of specimen support hole 6c is extended, a specimen 9 is released, and after measurement termination is discharged to degree process.

In addition, it cannot be overemphasized that CPU19 has controlled all of these the actuation of a series of.

Moreover, as for air beef fat and 28, the pump for a reversal holder drive in 26 and 27 are [ a filter and 29 ] surge tanks among the 7th Fig.

Although it seems that the example of this invention was explained above, the quality of the material of specimen supporter material or its location can be suitably chosen according to the quality of the material of a specimen, a dimension, etc. For example, although specimen supporter material used high intensity silicone rubber (degree of hardness; Shore A55 degree\*\*5 degree) in this example, natural rubber, chloroprene rubber, nitril butadiene rubber, ethylene propylene rubber, etc. are

suitable. Moreover, the location of specimen supporter material can be adjusted according to the die length of a specimen by really not considering a container 17 as shaping, but supposing at each sealed cabins 1a and 1b and every 1c that it is disengageable, and enabling adjustment of the joint location (for example, screwing).

[Effect of the Invention]

Since this invention holds a specimen at the septum tip of thin meat as explained above, there are few touch areas with a specimen and it can aim at improvement in the accuracy of measurement.

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DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

It is an important section enlarged drawing [ in / the outline block diagram of the ventilation measuring instrument with which in the sectional view of the specimen supporter material of an example, and Fig. 3 the sectional view of the retaining ring of an example and Fig. 4-6 adopted the explanatory view of the operating state of an example, and, as for Fig. 7 , the important section sectional view of this invention example and Fig. 2 adopted / Fig. 1 / the example and Fig. 8 , and / in Fig. 9 / Fig. 8 ], and Fig. 10 is a sectional view of the conventional specimen supporter material. [ the sectional view of the conventional example ]

1 [ .. A septum, 6c / .. A specimen support hole, 9 / .. Specimen. ] .... A sealed cabin, 6 .. Specimen supporter material, 6a .. The periphery section, 6b

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[Translation done.]

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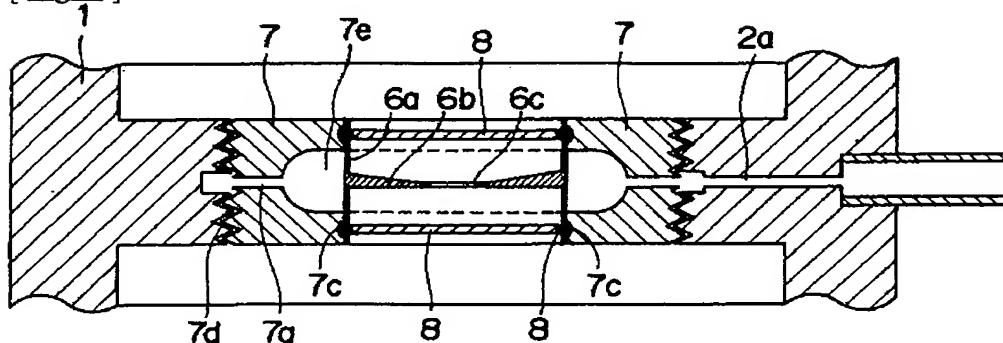
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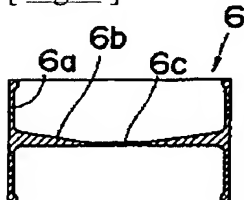
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## DRAWINGS

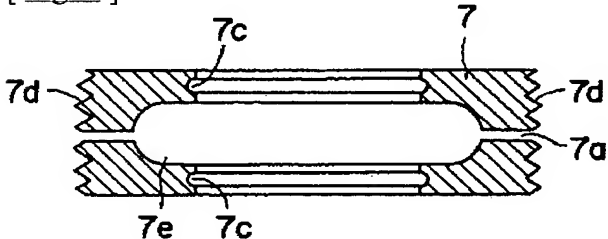
[ Fig. 1 ]



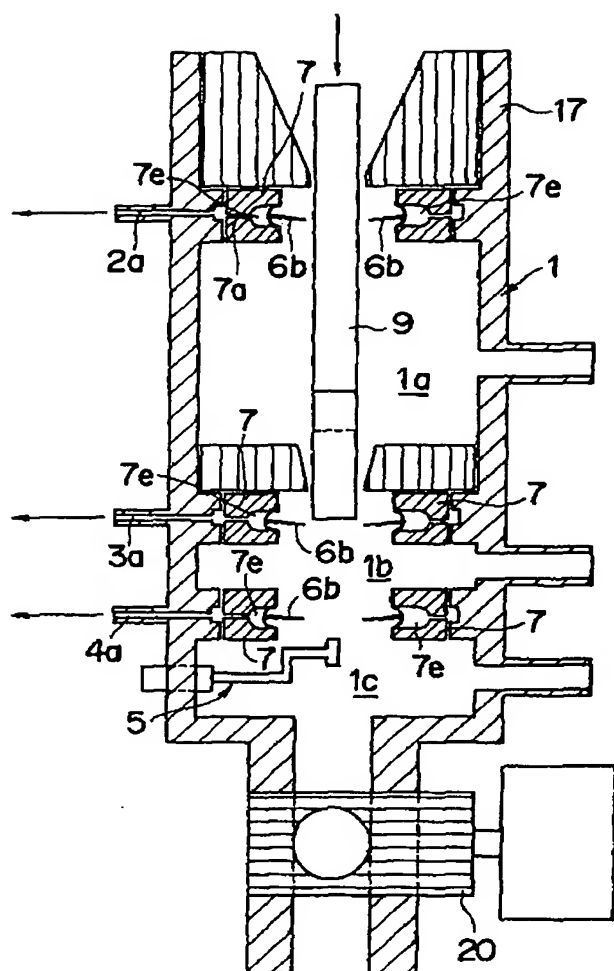
[ Fig. 2 ]



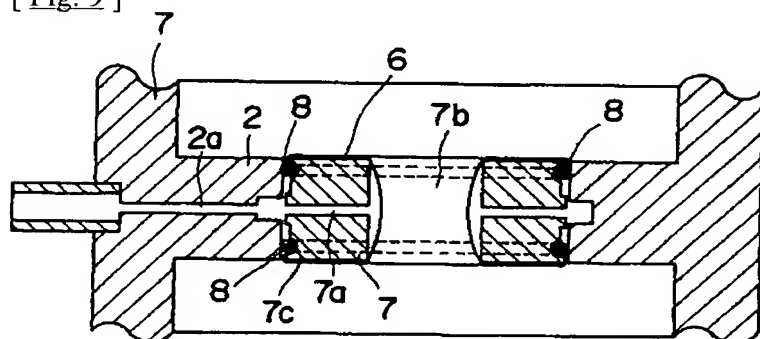
[ Fig. 3 ]



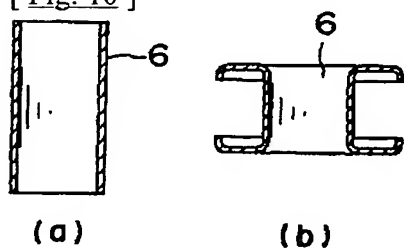
[ Fig. 4 ]



[ Fig. 9 ]

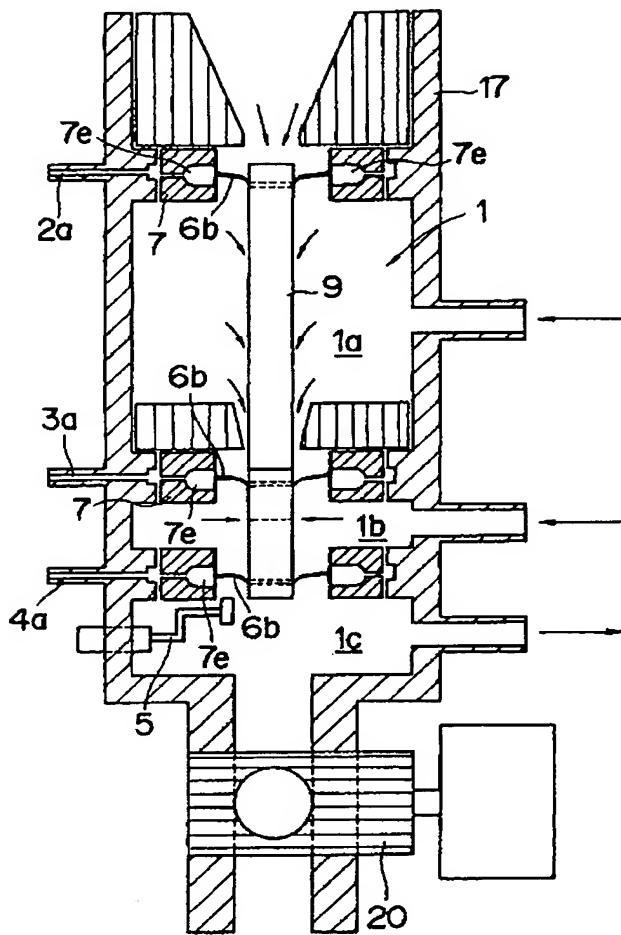


[ Fig. 10 ]

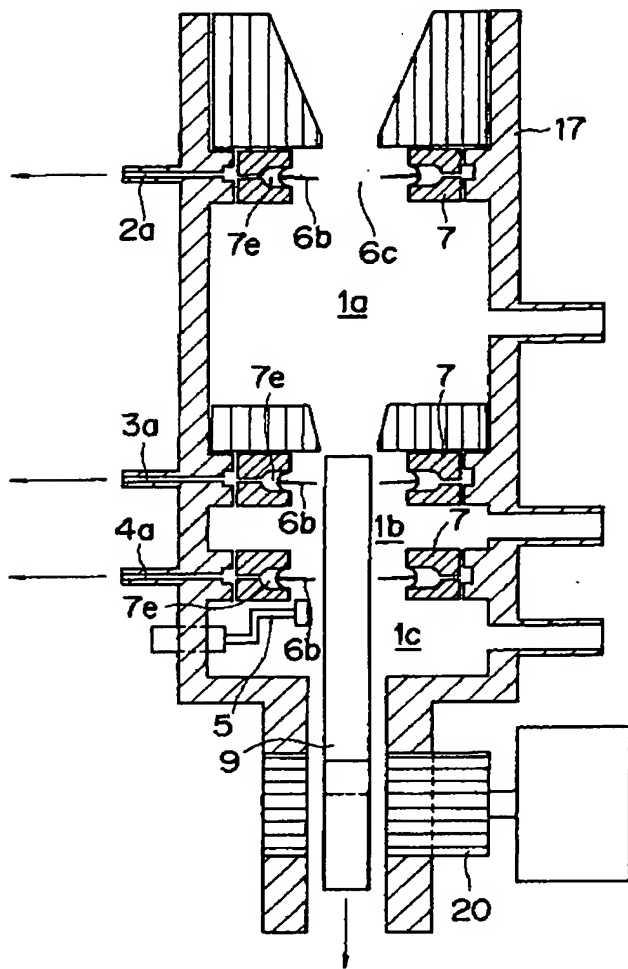


[ Fig. 5 ]

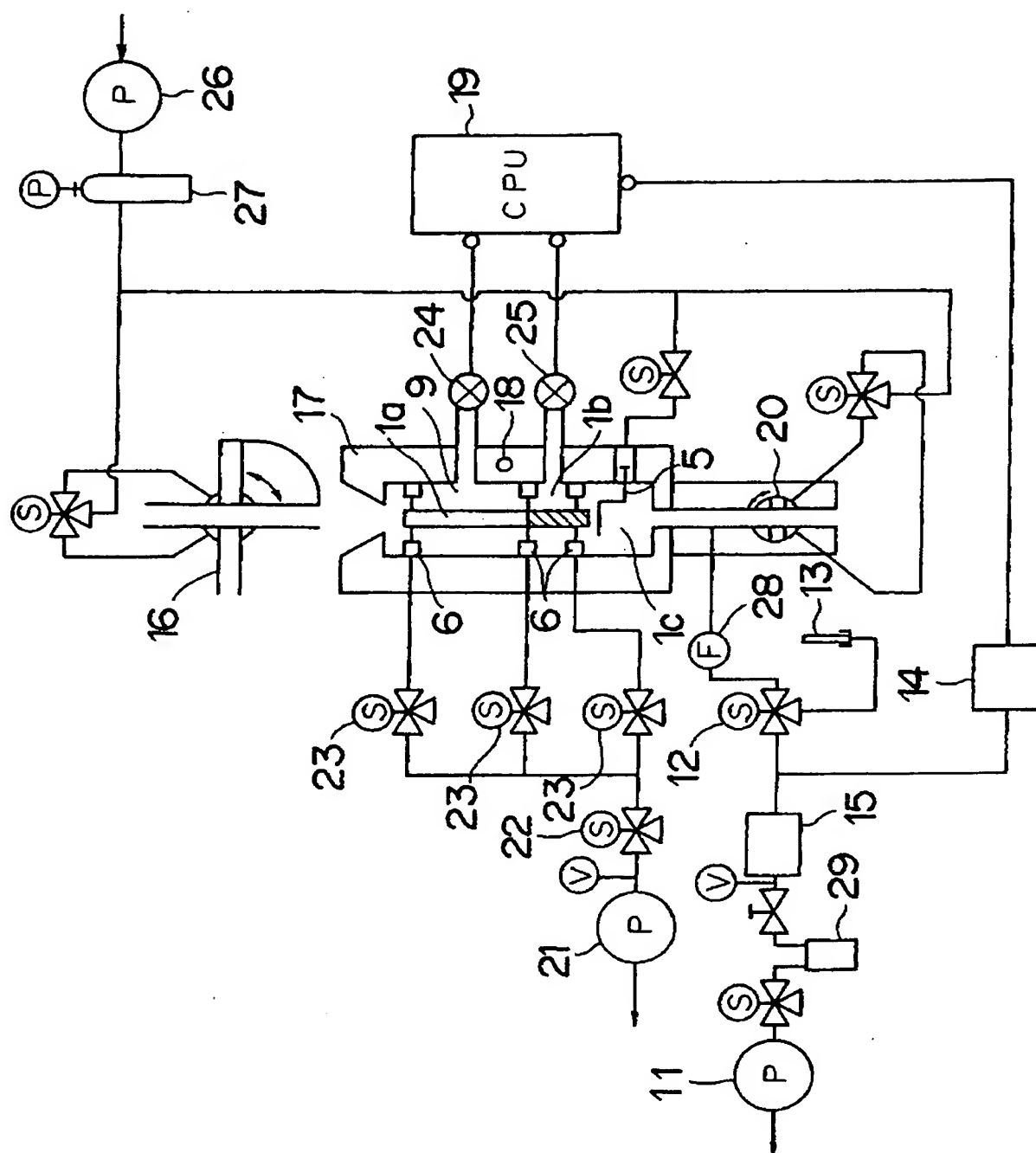




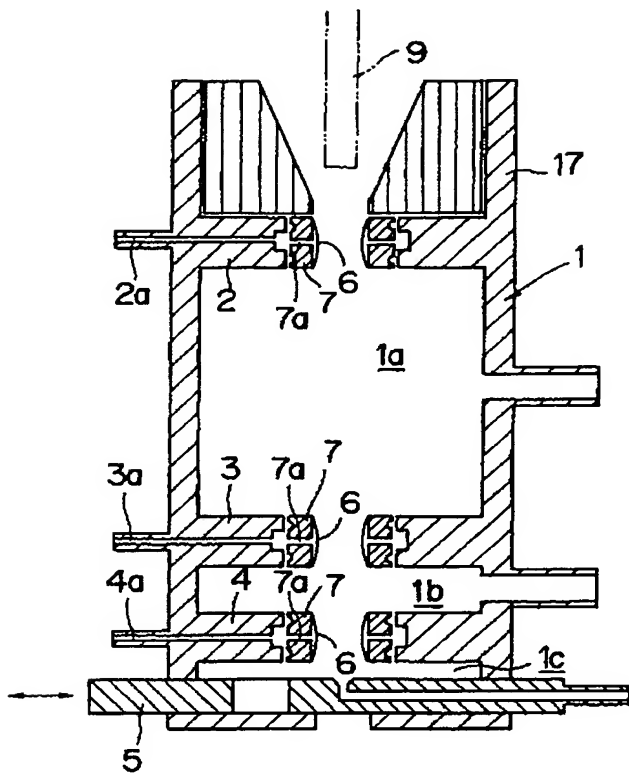
[ Fig. 6 ]



[ Fig. 7 ]



[ Fig. 8 ]



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		(56) 参考文献	実開 昭56-31326 (J P, U)

(54) 【発明の名称】 ベンチレーション測定器における検体支持装置

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【特許請求の範囲】

【請求項 1】 検体の一部を閉じ込める気密室と、筒状の柔軟な薄肉材からなり、気密室の内壁に装着されてその内面が検体外周面に圧接することにより検体を支持するとともに気密室内を区分する検体支持部材とを備え、気密室内の空気を吸引することにより検体の通気抵抗と空気流入割合を測定するとともに、検体支持部材をその外周方向から吸引して検体支持部材の内径を拡張せしめ、気密室に対する検体の装脱を行うようにしたベンチレーション測定器において、  
前記筒状の検体支持部材は、筒状の外周部と、中央部内壁に突出する薄肉の隔壁と、この隔壁の中心に設けた検体支持孔とから構成し、検体支持孔の薄肉縁部により検体を支持するとともに、隔壁に対応する外周部を吸引することにより検体支持孔の径を拡張させて気密室に対す

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る検体の装脱を行うようにした検体支持装置。

【発明の詳細な説明】

【産業上の利用分野】

本発明はベンチレーション測定器における検体支持装置に係り、特に紙巻き煙草の通気抵抗等を測定する装置に適した検体支持装置に関する。

【従来の技術及び発明が解決しようとする問題点】

この種のベンチレーション測定器は、気密室内に検体を保持し、気密室内を所定を流量にて吸引する際、外部から検体内に吸引される空気の流量と、検体の通気抵抗を計測するものである。

このような装置において、紙巻煙草の如き軽量且つ柔軟な検体を支持するには、ラテックスチューブの如き薄肉で柔軟な部材が用いられる。しかもこの検体支持部材は、連続的に検体の測定を行う自動測定器にあっては、

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検体の支持、解放、及び気密室の区分（機密性を維持する区隔）の役割を担っているため、一般的にはやはり負圧吸引により検体支持の解除動作が行われるようになっている。

第8図は上記の如きベンチレーション測定器における検体支持装置を示すもので、気密室1はフランジ2,3,4により上方より第1,第2,第3の機密室1a,1b,1cに区分されており、第3の気密室1cの下部には矢印方向に可動の検体ストッパ5が設けられている。各々のフランジ2,3,4内には吸引路2a,3a,4aが形成され、このフランジ2,3,4の内側には後述する検体支持部材6を装着するための保持リング7が固定され、保持リング7には前記吸引路2,3,4と連通する吸引孔7aが形成されている。上記各々のフランジ及び保持リング7、検体支持部材6との関係は全く同様であり、この1つを拡大して示したのが第9図である。

第10図は検体支持部材の装着前及び装着時の形状を示す断面図で、ラテックスチューブの如き柔軟且つ薄肉の合成樹脂材から一体に形成され、装着前（a図）は円筒状、装着後はその両端がコ字状に折り返された形状となる。

第9図からわかるように、この検体支持部材6は、保持リング7の中央の検体支持孔7b内に略密着するように挿入されており、折り返された検体支持部材6の両端は引き伸ばされて、保持リング7の外周部に密着し、これにより保持リング7に装着される。

更に保持リングの外周には溝7cが形成されており、この溝7c内にOリング8が嵌合することにより、検体支持部材6の保持リング7からの脱落を防止している。

検体9は測定時は検体支持孔7b内に挿入され、検体ストッパ5によりその長手方向の位置が定められる。挿入の際は、吸引路2,3,4、吸引孔7aを介して外部から負圧がかけられる。負圧により検体支持部材6は保持リング7の内壁に密着状態となるから、検体9の外径より幾分拡張に形成された検体支持孔7b内に検体9は容易に貫挿される。次いで負圧を取り除くと、検体支持部材6の内壁は第9図に示すように内側に膨出するので検体支持孔7bの径が縮小されたことになり、検体支持部材6の弾力性に軽量の検体9は気密室1内に支持される。この際、3個の検体支持部材6によって気密室1内は3個の気密室1a,1b,1cに区分されたことになる。測定終了後は、再度検体支持部材6の外周に負圧をかければ、検体9は気密室1外に落下する。

ところで上記検体支持装置では、検体支持部材による検体の支持が曲面状に膨出した検体支持部材の内壁にて行われるため、その接触が面接触となる。その結果、例えば紙巻煙草のように外周部全体に微細な通気性をもった検体に関し、複数の機密室において各部位毎の空気流入量を測定するような場合には、面接触部分が閉塞されてしまうため、精度の高い測定値を得ることができないと

いう欠点があった。

本発明は上記の点に鑑みてなされたもので、可能な限り少ない接触にて検体を保持し、精度の高い測定を可能にするベンチレーション測定器の検体支持装置を提供しようとするものである。

〔問題点を解決するための手段及び作用〕

本発明は上記目的を達成するため、筒状の検体支持部材は、筒状の外周部と、中央部内壁に突出する薄肉の隔壁と、この隔壁の中心に設けた検体支持孔とから構成し、検体支持孔の薄肉縁部により検体を支持するとともに、隔壁に対応する外周部を吸引することにより検体支持孔の径を拡張させて気密室に対する検体の装脱を行うようにした構成を特徴としている。

以上の構成により、検体への薄肉縁部の圧接により検体の支持及び気密室の区分が行われるため、検体に対する検体支持部材の接触面積が際めて小さくなり、精度の高い測定が可能になる。

〔実施例〕

本発明の実施例を第1～7図に基づいて説明する。

第1図は実施例の要部断面図、第2図は検体支持部材の断面図、第3図は保持リングの断面図である。

図において、検体支持部材6は柔軟なシリコンにて成形された薄肉の円筒状部材であり、筒状の外周部6a、中央内壁に内側に突出する隔壁6b、及び隔壁中心部の検体支持孔6cとを有している。外周部6aの長さは12mmで保持リング7の厚みと略同一であり、隔壁6bの厚みは周辺部で厚く1.5mm、中央部で0.25mmと薄いテーパ断面を有する形状であり、検体支持孔6cの径は検体9の径より幾分小さい5mmに設定されている。

保持リング7は外周部にネジ部7d、内周部に吸着室7e、吸着室7eの上下に2本の環状溝7cを有し、ネジ部7dが気密室1の内壁に螺着した際に吸着室7eが吸引孔7a、吸引路2aを介して外部に連通するようになっている。そして前記環状溝7c内にOリング8を嵌合することで、検体支持部材6は保持リング7の内壁に密着保持される。

第4,5,6図は上記検体支持装置の動作を示すものである。上記検体支持装置では、従来装置と同様に、検体支持部材6の外周部6aを吸着室7eから負圧吸引すると、隔壁6bに対応する外周部6a中央が吸着室7e内に引き込まれ、第4図に示すように検体支持孔6cの径が約12mmまで拡張される。このとき検体9は上方より挿入することができる。負圧吸引を停止して吸着室7e内を大気圧とすれば第5図に示す如く検体支持部材6の外周部6aは元に戻り、隔壁6bの縁部はわずかに湾曲して検体9の外出面に圧着する。これにより検体9は保持されるとともに各々の気密室1a,1b,1cは密閉される。検体9の測定が終了したら再度負圧吸引して第6図に示すように検体支持孔6cをひらく。これにより検体9は下方へ落下し、次工程に導かれる。

本実施例の検体支持は、薄肉の隔壁6b内縁にてなされ

る。従って、検体9と支持部材6との接触は略線接触であるか、又は面積の小さい面接触となって、検体9の外周壁（検体が紙巻煙草であれば紙面の通気孔）を閉塞する割合が少なく、精度の高い通気抵抗の測定ができる。またこの際の隔壁6bによる密閉性は良好である。次に上記検体支持装置を備えたベンチレーション測定装置の動作を第7図に基づいて説明する。

まず実際の測定前に、測定用ポンプ11系統の基準流量設定が行われる。

はじめに、測定／調整切換用のバルブ12を調整側とし、測定用ポンプ11を作動してテストピース13側から空気を吸入する。この際、通気抵抗測定器14の指示値がテストピース13の通気抵抗値となるように流量制御器15を設定指標を操作する。その操作終了後、バルブ12を測定側に固定する。これで基準流量設定作業が完了する。

次に、前工程（例えば紙巻煙草の円周測定等）を終了した検体9は、反転ホルダ16により水平状態で保持されているが、測定容器17内に検体9がないと、検体検出センサ18からの信号によりCPU19が検体搬入可能との指令を出す。この指令によりロータリバルブ20と検体ストッパ5とが閉状態となるとともに、グリップシール（検体支持）用真空ポンプ21系統のバルブ22,23が開かれ、検体支持部材6の外周部は負圧吸引され、検体支持孔6cは拡張となる。

ここで、水平状態で保持されていた検体9は、反転ホルダ16の90°反転により測定用容器17内に落下搬入され、検体ストッパ5により停止保持される。

容器17内に保持された検体9は検体検出センサ18にて検出され、検出信号がCPU19に送られる。CPU19はこれに基づきグリップシール用バルブ23の閉指令を出し、バルブ23が閉じられ、検体支持部材6を外周部（吸着室内）は大気圧となり、検体支持孔6cの径が小さくなって検体9を保持するとともに、容器17内の3つの気密室1a,1b,1cを密封する。そして検体ストッパ5は開かれ測定が開始される。

測定は、次のようになされる。気密室1a内に流入する空気量は気密室1aの開口に取り付けた流量計24、気密室1b\*

内に流入する空気量は気密室1aの開口に設けられた他の流量計25、気密室1c内の通気抵抗は通気抵抗測定器14にて各々測定され、これらの値がCPU19にインプットされることにより、検体9全体の通気抵抗及び検体9の各部位毎の空気流入割合が計算される。

測定終了後は、CPU19の指令により、ロータリバルブ20が開き、再びグリップシール用バルブ23が開となり、検体支持部材6が吸引され、検体支持孔6cの径が拡張し、検体9が解放されて次工程へと排出される。

尚、これらの一連の動作はすべてCPU19がコントロールしていることは言うまでもない。

また第7図中、26は反転ホルダ駆動用のポンプ、27はエアヘット、28はフィルタ、29はサージタンクである。

本発明の実施例は以上説明したようであるが、検体支持部材の材質あるいはその位置等は検体の材質、寸法などに応じて適宜選択することができる。例えば本実施例では検体支持部材は高強度シリコンゴム（硬度：ショアA55°±5°）を用いたが、天然ゴム、クロロブレンゴム、ニトリルブタジエンゴム、エチレンプロピレンゴム等も適している。また検体支持部材の位置は、容器17を一体成形とせず各気密室1a,1b,1c毎に分離可能とし、その結合位置を調整可能（例えば螺合）とすることにより検体の長さに応じて調整することができる。

〔発明の効果〕

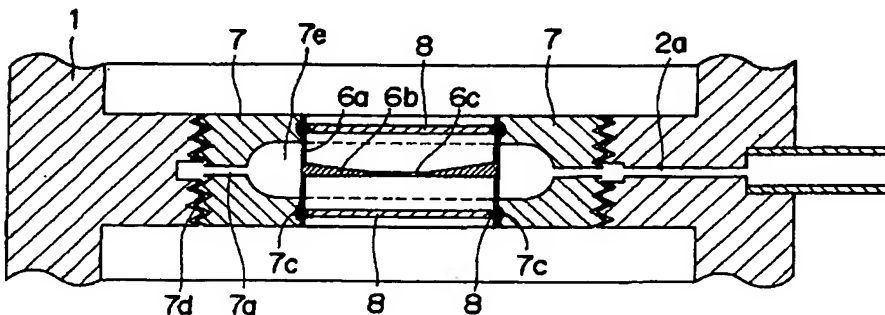
本発明は以上に説明したように、薄肉の隔壁先端にて検体を保持するものであるから、検体との接触面積が少なく、測定精度の向上が図れる。

〔図面の簡単な説明〕

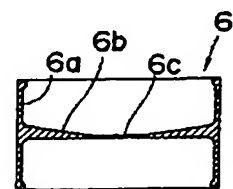
第1図は本発明実施例の要部断面図、第2図は実施例の検体支持部材の断面図、第3図は実施例の保持リングの断面図、第4～6図は実施例の作動状態の説明図、第7図は実施例を採用したベンチレーション測定器の概略構成図、第8図は従来例の断面図、第9図は第8図における要部拡大図であり、第10図は従来の検体支持部材の断面図である。

1……気密室、6……検体支持部材、6a……外周部、6b……隔壁、6c……検体支持孔、9……検体。

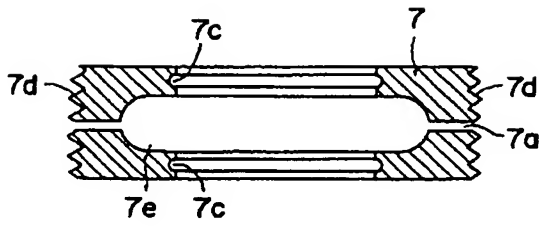
〔第1図〕



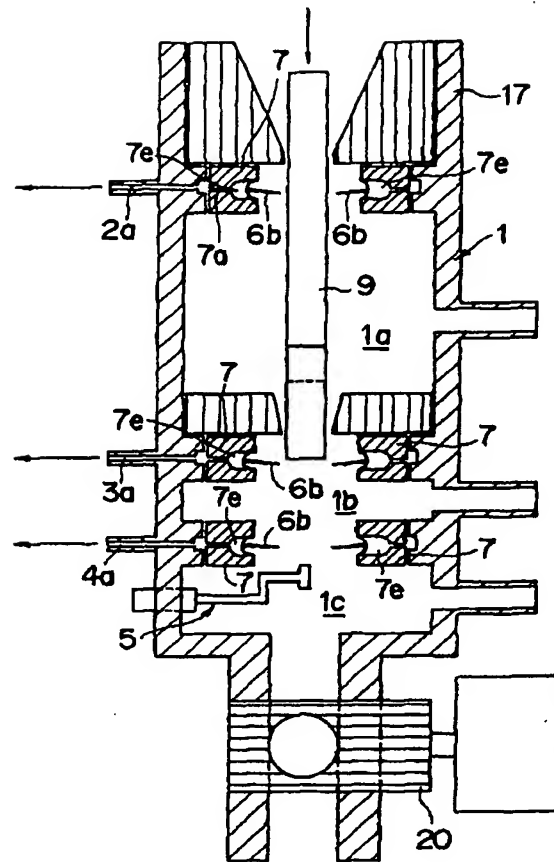
〔第2図〕



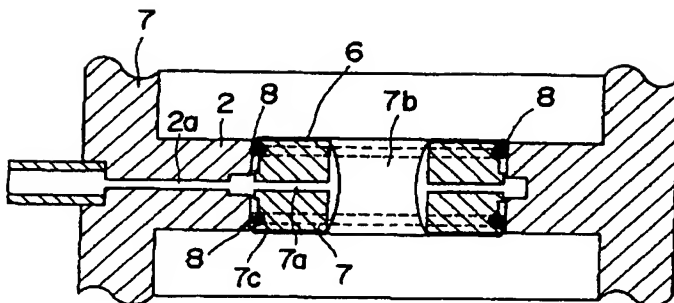
【第3図】



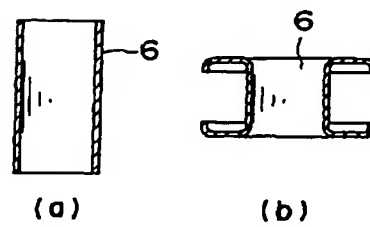
【第4図】



【第9図】

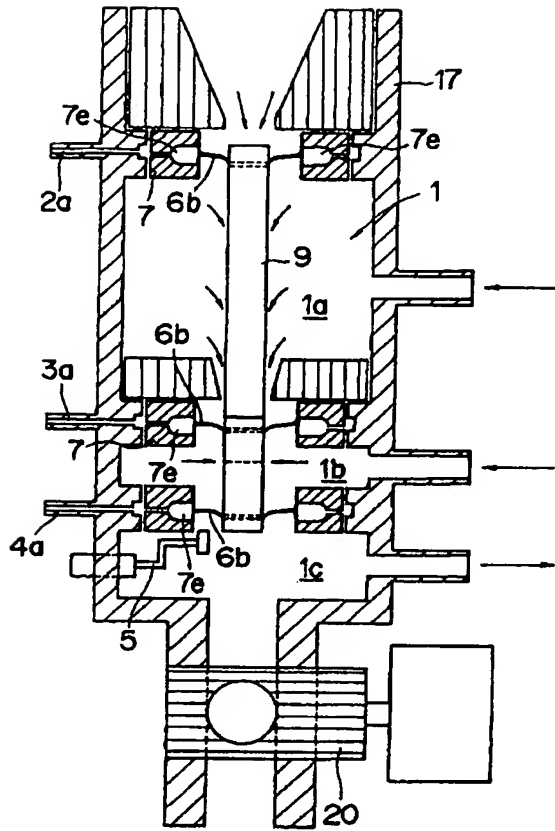


【第10図】

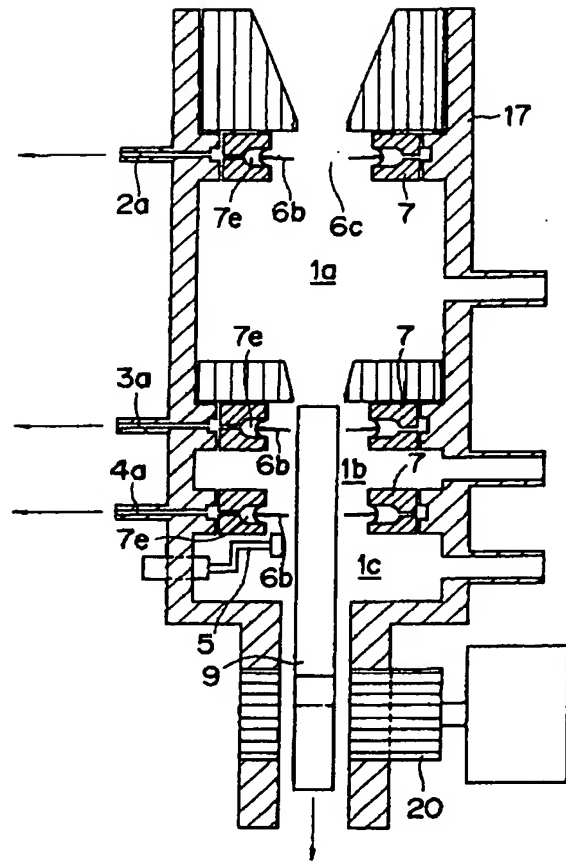




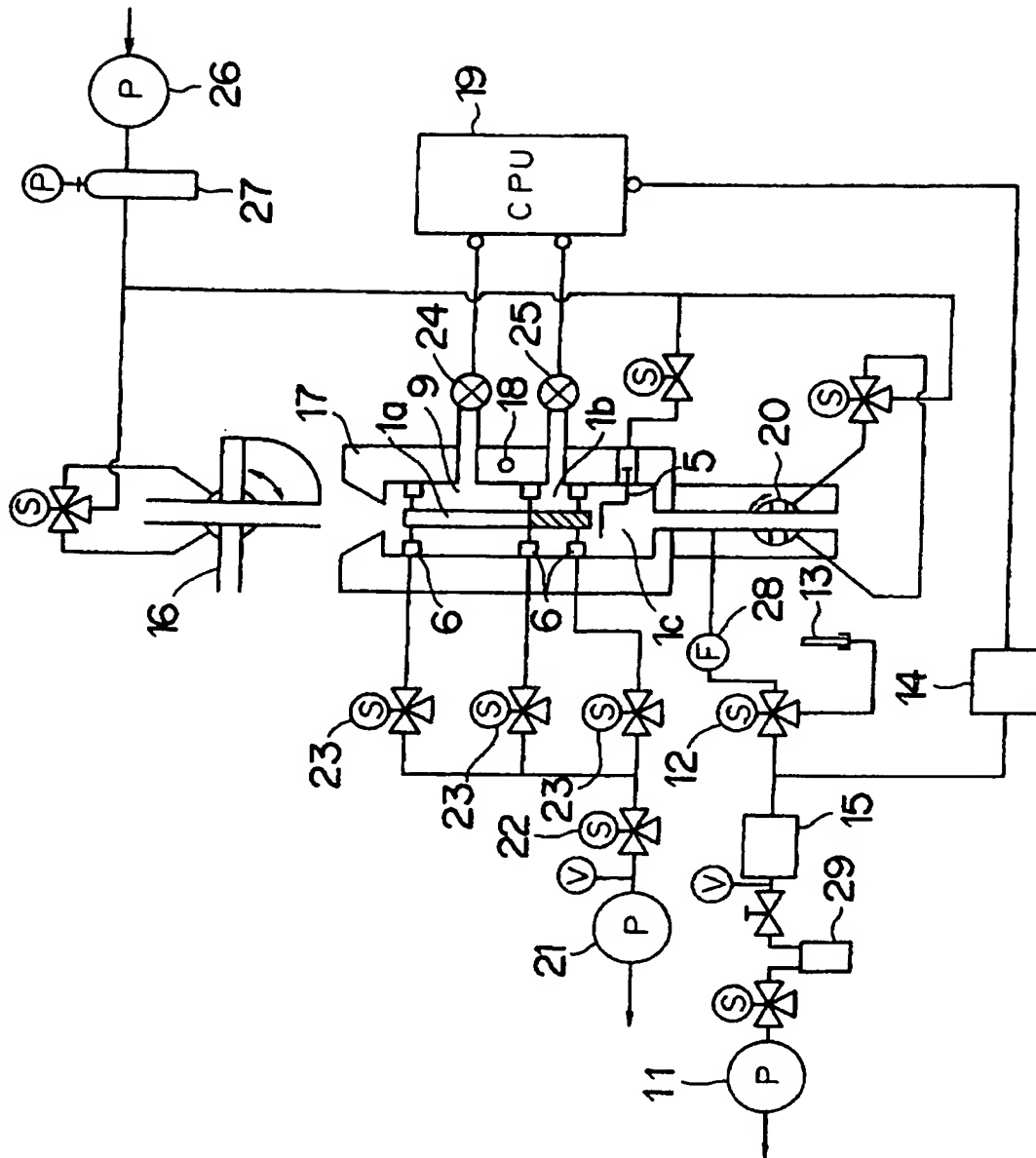
【第5図】



【第6図】



【第7図】



【第8図】

